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Title:
Is macular pigment spatial profile a clinical biomarker in children of AMD parents?

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Abstract
A central dip in macular pigment (MP) has shown to be more prevalent with age, in AMD patients, and in smokers. We investigated clinical and genetic biomarkers in non‐smoking children of AMD parents (n = 131) over 40 years of age without AMD pathology in relation to their MP spatial profile. MP peak and volume were obtained with ARIS (Visual Pathways, Inc, Prescott, AZ USA) while spatial profiles for both eyes were classified visually and objectively. We explored risk factors including serum carotenoids and in‐vivo skin carotenoids, and cardiovascular biomarkers including omega‐3 fatty acids EPA and DHA, methylenetetrahydrofolate reductase C677T and A1298C in this well‐nourished Caucasian study group. Objectively, a central dip appeared more prevalent in children of AMD patients (41%) when compared to a healthy population. Those with central dip showed increased mean MP peak and volume, decreased serum L, Z, EPA and DHA, and decreased skin carotenoids in comparison to no dip. Identifying biomarkers in children genetically susceptible to AMD and introducing lifestyle changes such as nutrient repletion could provide invaluable advice to those associated with increased risk of AMD.